

SEQUENCE LISTING

<110> Craig, Ruth W.
Bingle, Colin D.
Whyte, Moira

<120> Mcl-1 GENE REGULATORY ELEMENTS AND A
PRO-APOPTOTIC Mcl-1 VARIANT

<130> DART1110-1

<160> 19

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 8253

<212> DNA

<213> Homo sapiens

<400> 1

tctagagtca	aatgtgcctt	attatcagta	caaaaataaa	tggtgtcagc	tgggtgcagt	60
gactcacacc	tgtaatccca	gcactttaag	aggctgaggc	aggtggatca	cctgaggcca	120
ggagtttgag	accagcctgg	ccaacatggt	gaaaccacat	tgtcaggcct	ctgagcccaa	180
gccaagccat	cgcacccctt	gtgacttgca	cgtatacatc	cagatggcct	gaagtaactg	240
aagatccaca	aaagaagtaa	aaatagcctt	aactgatgac	attccaccat	tgtgatttgt	300
ttctgcccc	cccgaactga	tcaatgtact	ttgtaatctc	ccccaccctt	aagaagggtc	360
tttgtaattc	tccccaccct	tgagaatgta	ctttgtgaga	tccacccttg	cccacaaaac	420
attgctctca	acttcaccac	ctatcccaaa	acctgtaaga	actaatgata	atccatcacc	480
ctttgctgac	tctcttttgc	gactcagccc	gcctgcaccc	aggtgaaata	aacagccatg	540
ttgctcacac	aaagcctggt	tggtggtgct	ttcacacaga	cgcgcatgaa	acacatctct	600
actaaaaata	caataatcag	ctgggcgagg	tggtcacag	ctgtaatctc	agcactttgg	660
gaggccgaga	caggcagggt	acttgaggcc	atgagttcga	gaccagcctg	gccaacatcg	720
tgaaaacccc	atctctacca	aaaatacaaa	aactagccag	atgtggtggc	gcacgcctgt	780
aatcccagct	actcgggagg	ctgaggtacc	gaatcgtctg	aacgtgggaa	gtggagcttg	840
tagtgagccg	agatcgcccc	actgcactcc	agcctgggca	acagagctag	actgtctcaa	900
aacaaacaaa	aaatggtgtc	aagactctca	gacgagattc	taatggatta	aggcctatat	960
gtaaatagca	ccaaagacta	tggaaacagag	atgggagaag	caagcagggg	ggcaggaata	1020
gtttagctgt	ggcagtttta	gcttagtcca	cttacataaa	tggttcttta	gggtagcacg	1080
tgagacatcc	tcatattcaa	acattggact	gagagtagag	agctgtgcaa	aataaccaca	1140
agtccccaac	tatgccccct	taattatccc	tatcatctaa	gactgttggt	cccatccatc	1200
actgaacttc	cccgctctct	tccttcaacc	cctgtgttag	tcaatggttg	aaattttgat	1260
ttggtaaaaa	acctctggcg	aaaaccagca	aaaagggtct	acaaatcagg	tctcagggaa	1320
gcacagaggt	agccacgaga	aggcccagag	tgctcatgga	aagagctcga	gcccaggagc	1380
tctgggagga	ccccaggcgc	tcggagccgc	cgttacgtaa	ccggcactca	gagcctccga	1440
agaccggaag	gccccgctca	ggccccggcc	ccggccccgg	ccccgccccg	gcccggccgg	1500
gcagctggta	gggtgccgtg	gcaaccctcc	ggaagctgcc	gcccctttcc	ccttttatgg	1560
gaatactttt	tttaaaaaaa	aagagtctcg	tggcgccacc	ccgtaggact	ggccgcccta	1620
aaaccgtgat	aaaggagctg	ctcgccactt	ctcacttccg	cttccttcca	gtaaggagtc	1680
ggggtcttcc	ccagttttct	cagccaggcg	gcggcggcga	ctggcaatgt	ttggcctcaa	1740
aagaaacgcg	gtaatcggac	tcaacctcta	ctgtgggggg	gccggcttgg	gggcccggcg	1800
cggcggcgcc	acccgccccg	gagggcgact	tttggtacg	gagaaggagg	cctcggcccc	1860
gcgagagata	gggggagggg	aggccggcgc	ggtgattggc	ggaagcgccg	gcgcaagccc	1920
cccgtccacc	ctcacgccag	actcccggag	ggtcgcgcgg	ccgcgcacca	ttggcgccga	1980
ggtccccgac	gtcaccgcga	cccccgcgag	gctgcttttc	ttcgcgcaca	cccgcgcgcg	2040
ggcgcgcgtt	gaggagatgg	aagccccggc	cgctgacgcc	atcatgtcgc	ccgaagagga	2100
gctggacggg	tacgagccgg	agcctctcgg	gaagcgcccg	gctgtcctgc	cgctgctgga	2160
gttggtcggg	gaatctggta	ataacaccag	tacggacggg	tactaccct	cgacgccgcc	2220
gccagcagag	gaggaggagg	acgagttgta	ccggcagtcg	ctggagatta	tctctcggta	2280

FASTA format

ccttcgggag	caggccaccg	gcgccaagga	cacaaagcca	atggggcaggt	ctggggccac	2340
cagcaggaag	gcgctggaga	ccttacgacg	ggttggggat	ggcgtgcagc	gcaaccacga	2400
gacggtcttc	caaggtaagg	gggttcatta	atcgccaagg	cctcactccc	ttttttccat	2460
ctctccccgg	actcactcgc	caagggtggg	ttggaaaccg	aaacgagtca	gtgttgaaac	2520
gtgtctcatc	ctattcctga	agccagaata	ttctggccat	gagtcattgt	ttccgccccat	2580
cttgattctt	ttggaaatgg	cagctcttgt	tcaaagaccg	gaaaggggtg	gatgtcaatt	2640
tcaagtgggg	tcaacctgag	ttctgtaaat	cccagtagcg	attttcccgc	cgcggggtggg	2700
caggcgaatc	ttgcgccggg	ttagacaaaag	gaggccgtga	ggacctgcac	gcttttcttt	2760
ctcaggcatg	cttcggaaac	tggacatcaa	aaacgaagac	gatgtgaaat	cgttgtctcg	2820
agtgatgac	catgttttca	gcgacggcgt	aacaaactgg	ggcaggattg	tgactctcat	2880
ttcttttggg	gcctttgtgg	ctaaacactt	gaagaccata	aaccaagaaa	gctgcacgca	2940
accattagca	gaaagtatca	cagacgttct	cgtaaggaca	aaacgggact	ggctagttaa	3000
acaaagaggg	tgggtaagtt	tgccttaagg	atgaaagggg	ccttgaggatg	gagtggaggt	3060
agaatgaagg	atttttttta	gagaggtggg	gatattctaaa	ggtttttatg	acgcacggct	3120
gtttgcaggc	tctaactaaa	ggaccattgt	ttatttgatt	tttaagtagt	ggatcccttag	3180
agatagtggg	atggcggtct	tgaattgtat	caaaaatctt	ggttttctct	aggcaatttt	3240
ttgttccaat	tcagttgaat	actcttcagt	ggattcaaac	catgaaaaaa	taagtcacca	3300
ggggaggata	gctgaaataa	ttcctaaggc	ggtgcctggt	ttaatggaga	agatatgggg	3360
tggagcctgc	gttttaaaaa	aaccagatc	tgatgcagga	tgtacttaac	tacgttgaga	3420
aaaactgac	tgcgcaattg	aggcggtact	gaaatattag	gtgggtggaga	tttgagaata	3480
agggttttctg	tcttttacct	catgggaact	ctggaagtcc	ttttgttagg	ataaatccta	3540
ataagacctt	gatagtactg	taaaatgaag	tttaattatc	atgggtcccc	gcttaagaaa	3600
ctgaagaact	tattttcttt	ttttgccccg	gggtgaataa	taattgggtt	actattgctt	3660
tagggggaaa	ccttagatat	tttaatttac	cttctctctg	gatagtagtg	ttgttaagag	3720
agcagaaacc	cattcttgaa	aatgtgcttt	tcttttttgt	tttctaggat	gggtttgtgg	3780
agttcttcca	tgtagaggac	ctagaagggtg	gcactcaggaa	tgtgctgctg	gcttttgcag	3840
gtgttgctgg	agttaggagct	ggtttggtac	atctaataag	atagccttac	tgtaagtga	3900
atgttgtagt	tttaaccaac	caccaccacc	accaaaccac	gtttatgcag	ttggactcca	3960
agctgttaact	tcctagagtt	gcaccctagc	aacctagcca	gaaaagcaag	tggcaagagg	4020
attatggcta	acaagaataa	atacatggga	agagtgtctc	ccattgattg	aagagtcaact	4080
gtctgaaaga	agcaaagtcc	agtttcagca	acaaacaaac	tttgtttggg	aagctatgga	4140
ggaggacttt	tagatttagt	gaagatggta	gggtggaaag	acttaatttc	cttggtgaga	4200
acaggaaagt	ggccagtagc	caggcaagtc	atagaattga	ttaccgcgcg	aattcattaa	4260
tttactgtag	tagtggttaag	agaagcacta	agaatgccag	tgacctgtgt	aaaagttaca	4320
agtaatagaa	ctatgactgt	aagcctcagt	actgtacaag	ggaagctttt	cctctctcta	4380
attagctttc	ccagtagtact	tcttagaaaag	tccaagtgtt	caggactttt	atacctgtta	4440
tactttggct	tggttccatg	attccttactt	tattagccta	gtttatcacc	aataatactt	4500
gacggaaggc	tcagtaatta	gttatgaata	tggatatcct	caattcttaa	gacagcttgt	4560
aatgtatatt	gtaaaaattg	tatatatttt	tacagaaagt	ctatttcctt	gaaaacgaag	4620
aagtatcgaa	tttacattag	tttttttcat	acccttttga	actttgcaac	ttccgtaatt	4680
aggaacctgt	ttcttacagc	ttttctatgc	taaactttgt	tctgttcagt	tctagagtgt	4740
atacagaacg	aattgatgtg	taactgtatg	cagactgggt	gtagtggaaac	aaatctgata	4800
actatgcagg	tttaaatttt	cttatctgat	tttggttaagt	attccttaga	taggttttct	4860
ttgaaaacct	gggattgaga	ggttgatgaa	tggaaattct	ttcacttcat	tatatgcaag	4920
ttttcaataa	ttaggtctaa	gtggagtgtt	aaggttactg	atgacttaca	aataatgggc	4980
tctgattggg	caataactcat	ttgagttcct	tccatttgac	ctaatttaac	tggtgaaatt	5040
taaagtgaat	tcatgggctc	atcttttaaag	cttttactaa	aagattttca	gctgaatgga	5100
actcattagc	tgtgtgcata	taaaaagatc	acatcagggtg	gatggagaga	catttgatcc	5160
cttggttgct	taataaatta	taaaatgatg	gcttggaata	gcaggctagt	ctaaccatgg	5220
tgctattatt	aggcttgctt	gttacacaca	caggcttaag	cctagtagtg	caataaagca	5280
aatacttact	gttttggttc	tattaatgat	tcccaaacct	tggtgcaagt	ttttgcattg	5340
gcatctttgg	atttcagttc	tgatgtttgt	tctatcagac	ttaacctttt	atttcctgtc	5400
cttccttgaa	attgctgatt	gttctgctcc	ctctacagat	atttatatca	attcctacag	5460
ctttccccct	ccatccctga	actccttcta	gcccttttag	attttggcac	tgtgaaacct	5520
ctgctggaaa	cctgagtgac	cctccctccc	caccaagagt	ccacagacct	ttcatctttc	5580
acgaacttga	tcctggttagc	agggtggtaat	accatgggtg	ctgtgacact	aacagtcatt	5640
gagaggtggg	aggaagtccc	ttttccttgg	actggtatct	tttcaactat	tgttttatcc	5700
tgtctttggg	ggcaatgtgt	caaaagtcct	ctcaggaatt	ttcagaggaa	agaacatttt	5760
atgaggcttt	ctctaaagt	tcctttgtat	aggagtatgc	tcacttaaat	ttacagaaag	5820
agggtgagctg	tgttaaacct	cagagtttaa	aagctactga	taaactgaag	aaagtgtcta	5880

tattggaact	agggtcattt	gaaagcttca	gtctcggaac	atgaccttta	gtctgtggac	5940
tccattttaa	aataggtatg	aataagatga	ctaagaatgt	aatggggaag	aactgccctg	6000
cctgcccata	tcagagccat	aaggatcatc	ttgctagagc	tatttttacc	tatgtattta	6060
tcgttcttga	tcataagccg	cttattttata	tcagtgtatc	ctaaggacct	aaaagcactt	6120
tatgtagttt	ttaattaatc	ttaagatctg	gttacggtaa	ctaaaagcct	gtctgccaaa	6180
tccagtggaa	acaagtgcac	agatgtgaat	tggtttttag	gggccccact	tcccaattca	6240
ttaggtatga	ctgtggaaat	acagacaagg	acttagttga	tattttgggc	ttggggcagt	6300
gagggcctag	gacaccccaa	gtgggtttgg	aaaggaggag	ggagtgggtg	gtttataggg	6360
gaggaggagg	cagggtggtc	aagtgtctgc	tggctacgta	gttcgggcaa	atcctccaaa	6420
agggaaaggg	aggatttgct	tagaaggatg	gggctcccag	tgactacttt	ttgacttctg	6480
tttgtcttac	gcttctctca	gggaaaaaca	tgcagtcctc	tagtgtttca	tgtacattct	6540
gtgggggggtg	aacaccttgg	ttctgggtta	acagctgtac	ttttgatagc	tgtgccagga	6600
aggggttagga	ccaactacaa	attaatgttg	gttgtcaaat	gtagtgtgtt	tccctaactt	6660
tctgtttttc	ctgagaaaaa	aaaataaatc	ttttattcaa	atacagggtg	tgatatgggt	6720
cttttctcat	cgacgcctct	ttttccttcc	ctctcttagg	caaacctttt	agagaagtca	6780
gctgagcaaa	tatgtacagg	tgggaattcaa	agcaaaagcc	tcacaaagtt	gatttgcctt	6840
agagcaaagg	acagttcctt	cttcaattct	aattagaggt	gttgggtttt	taattaaata	6900
tattactgct	gtacttagag	gagttcttaa	acctccaagt	aaaatcaaaa	acctctttaa	6960
aatcaaaatt	tctgtcttga	tttattttatt	tattattttt	tttttgagat	ggagttttgc	7020
tcttgttgtc	cagggtggag	tgcaatggcc	agatctccgc	tcaccgcaac	ctccgcctcc	7080
aggttcaaat	gatttctctg	cctcagcctc	ctgagttagt	gggaatacag	gcatgcgcca	7140
ccacaccag	ataattttgt	atttttggtg	gagatggggt	ttctccgtgt	tggtcaggct	7200
ggtcttgaac	tcccgacctc	aggtgattgc	ccacctctgc	ctcccagagt	gccaggatac	7260
aggcgtgagc	catcgacccc	agcctctgtc	ttgatttttt	tgaatcacca	ggtgttggtg	7320
tgttttgttt	tgttttgttt	tgaggcacag	tctcactctt	ttgcccaggc	tagagtgcag	7380
tggggcaatc	tcgggtcact	gcaacctcag	cctcccaggt	agctgggatt	acagggtgcc	7440
gccaccatgc	ccggctaatt	tttctatttt	tggtagagac	ggggttttgc	cgtgttggtc	7500
aggctggttt	gaagtccctg	cctcagtgat	ccactcgctc	cagccgaagt	gctgcgatta	7560
cagacctgag	ccactgcgcc	cagccttgat	tttgaggtaa	gagggtactt	acagcagtta	7620
tctatcataa	cacctaaata	atacctaaag	ttaaagagtt	ttgatgaagt	tcttggcagc	7680
agtgtctttc	cccttctgct	ttccaaaagg	aggtaaaaag	aagccagtca	atttcaaaaa	7740
ccctatcctg	cttttatttt	cagctacctt	gaaagtgagc	tgaatcacca	tggaaatgtg	7800
caaagtgtgag	gtttgcatac	ttgggtttta	gccctgagca	ccatatgcta	atcaggcaat	7860
caggattctg	tgccctccctg	cagtcagttg	catttctatt	taaaagtgca	ttttgggtttg	7920
gaagcccctt	ttggagccta	actaccaaaa	ggcagcaact	ttttgtatca	ttacaaaagaa	7980
agctgtgtaa	gtgcactccc	aagcaaaagg	gtggtaggag	agtagcagcc	acagaggacc	8040
caagcccaag	tcttggcctg	agttaagtta	gtgctattgc	tcccattgac	gtgctatgat	8100
gtgaagccgt	ttctgggtaca	gtgttccttt	gctcagcacc	ttaaaagctt	ggattttaata	8160
gtaactgggt	aaccttaatc	agtagtcaga	attatcaaca	ctttgcttta	tttgacacaa	8220
ccagactttc	tcagttcctg	ttctgtatct	aga			8253

<210> 2

<211> 350

<212> PRT

<213> Homo sapiens

<400> 2

Met	Phe	Gly	Leu	Lys	Arg	Asn	Ala	Val	Ile	Gly	Leu	Asn	Leu	Tyr	Cys
1				5					10					15	
Gly	Gly	Ala	Gly	Leu	Gly	Ala	Gly	Ser	Gly	Gly	Ala	Thr	Arg	Pro	Gly
		20						25					30		
Gly	Arg	Leu	Leu	Ala	Thr	Glu	Lys	Glu	Ala	Ser	Ala	Arg	Arg	Glu	Ile
		35					40					45			
Gly	Gly	Gly	Glu	Ala	Gly	Ala	Val	Ile	Gly	Gly	Ser	Ala	Gly	Ala	Ser
		50				55					60				
Pro	Pro	Ser	Thr	Leu	Thr	Pro	Asp	Ser	Arg	Arg	Val	Ala	Arg	Pro	Pro
65					70					75				80	
Pro	Ile	Gly	Ala	Glu	Val	Pro	Asp	Val	Thr	Ala	Thr	Pro	Ala	Arg	Leu

				85				90					95				
Leu	Phe	Phe	Ala	Pro	Thr	Arg	Arg	Ala	Ala	Pro	Leu	Glu	Glu	Met	Glu		
			100					105					110				
Ala	Pro	Ala	Ala	Asp	Ala	Ile	Met	Ser	Pro	Glu	Glu	Glu	Leu	Asp	Gly		
		115					120					125					
Tyr	Glu	Pro	Glu	Pro	Leu	Gly	Lys	Arg	Pro	Ala	Val	Leu	Pro	Leu	Leu		
	130					135					140						
Glu	Leu	Val	Gly	Glu	Ser	Gly	Asn	Asn	Thr	Ser	Thr	Asp	Gly	Ser	Leu		
145					150					155					160		
Pro	Ser	Thr	Pro	Pro	Pro	Ala	Glu	Glu	Glu	Asp	Glu	Leu	Tyr	Arg			
				165					170					175			
Gln	Ser	Leu	Glu	Ile	Ile	Ser	Arg	Tyr	Leu	Arg	Glu	Gln	Ala	Thr	Gly		
		180						185					190				
Ala	Lys	Asp	Thr	Lys	Pro	Met	Gly	Arg	Ser	Gly	Ala	Thr	Ser	Arg	Lys		
	195						200				205						
Ala	Leu	Glu	Thr	Leu	Arg	Arg	Val	Gly	Asp	Gly	Val	Gln	Arg	Asn	His		
	210					215					220						
Glu	Thr	Val	Phe	Gln	Gly	Met	Leu	Arg	Lys	Leu	Asp	Ile	Lys	Asn	Glu		
225					230					235					240		
Asp	Asp	Val	Lys	Ser	Leu	Ser	Arg	Val	Met	Ile	His	Val	Phe	Ser	Asp		
				245					250					255			
Gly	Val	Thr	Asn	Trp	Gly	Arg	Ile	Val	Thr	Leu	Ile	Ser	Phe	Gly	Ala		
			260					265					270				
Phe	Val	Ala	Lys	His	Leu	Lys	Thr	Ile	Asn	Gln	Glu	Ser	Cys	Ile	Glu		
	275						280						285				
Pro	Leu	Ala	Glu	Ser	Ile	Thr	Asp	Val	Leu	Val	Arg	Thr	Lys	Arg	Asp		
	290					295					300						
Trp	Leu	Val	Lys	Gln	Arg	Gly	Trp	Asp	Gly	Phe	Val	Glu	Phe	Phe	His		
305				310						315					320		
Val	Glu	Asp	Leu	Glu	Gly	Gly	Ile	Arg	Asn	Val	Leu	Leu	Ala	Phe	Ala		
			325					330						335			
Gly	Val	Ala	Gly	Val	Gly	Ala	Gly	Leu	Ala	Tyr	Leu	Ile	Arg				
		340					345						350				

<210> 3

<211> 271

<212> PRT

<213> Homo sapiens

<400> 3

Met	Phe	Gly	Leu	Lys	Arg	Asn	Ala	Val	Ile	Gly	Leu	Asn	Leu	Tyr	Cys		
1				5					10					15			
Gly	Gly	Ala	Gly	Leu	Gly	Ala	Gly	Ser	Gly	Gly	Ala	Thr	Arg	Pro	Gly		
		20						25					30				
Gly	Arg	Leu	Ala	Thr	Glu	Lys	Glu	Ala	Ser	Ala	Arg	Arg	Glu	Ile			
	35					40					45						
Gly	Gly	Gly	Glu	Ala	Gly	Ala	Val	Ile	Gly	Gly	Ser	Ala	Gly	Ala	Ser		
	50					55					60						
Pro	Pro	Ser	Thr	Leu	Thr	Pro	Asp	Ser	Arg	Arg	Val	Ala	Arg	Pro	Pro		
65					70					75				80			
Pro	Ile	Gly	Ala	Glu	Val	Pro	Asp	Val	Thr	Ala	Thr	Pro	Ala	Arg	Leu		
			85						90					95			
Leu	Phe	Phe	Ala	Pro	Thr	Arg	Arg	Ala	Ala	Pro	Leu	Glu	Glu	Met	Glu		
		100						105					110				
Ala	Pro	Ala	Ala	Asp	Ala	Ile	Met	Ser	Pro	Glu	Glu	Glu	Leu	Asp	Gly		
	115						120					125					
Tyr	Glu	Pro	Glu	Pro	Leu	Gly	Lys	Arg	Pro	Ala	Val	Leu	Pro	Leu	Leu		
	130					135					140						
Glu	Leu	Val	Gly	Glu	Ser	Gly	Asn	Asn	Thr	Ser	Thr	Asp	Gly	Ser	Leu		
145					150					155					160		

Pro	Ser	Thr	Pro	Pro	Pro	Ala	Glu	Glu	Glu	Glu	Asp	Glu	Leu	Tyr	Arg
				165						170				175	
Gln	Ser	Leu	Glu	Ile	Ile	Ser	Arg	Tyr	Leu	Arg	Glu	Gln	Ala	Thr	Gly
			180					185					190		
Ala	Lys	Asp	Thr	Lys	Pro	Met	Gly	Arg	Ser	Gly	Ala	Thr	Ser	Arg	Lys
		195					200					205			
Ala	Leu	Glu	Thr	Leu	Arg	Arg	Val	Gly	Asp	Gly	Val	Gln	Arg	Asn	His
	210					215					220				
Glu	Thr	Val	Phe	Gln	Gly	Trp	Val	Cys	Gly	Val	Leu	Pro	Cys	Arg	Gly
225				230						235					240
Pro	Arg	Arg	Trp	His	Gln	Glu	Cys	Ala	Ala	Gly	Phe	Cys	Arg	Cys	Cys
				245					250					255	
Trp	Ser	Arg	Ser	Trp	Phe	Gly	Ile	Ser	Asn	Lys	Ile	Ala	Leu	Leu	
			260					265					270		

```
<400> 4
ccggaagc

<210> 5
<211> 8
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide for PCR

<400> 5
ccttaagc

<210> 6
<211> 6
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide for PCR
```

6

6

[illegible]

<211> 10
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide for PCR

<400> 8
 ccttttatgg 10

<210> 9
 <211> 10
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide for PCR

<400> 9
 ccttcggctg 10

<210> 10
 <211> 44
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide for PCR

<400> 10
 caaccctccg gaagctgccg cccctttccc cttttatggg aata 44

<210> 11
 <211> 44
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide for PCR

<400> 11
 caaccctcct taagctgctg accctttccc cttcggctgg aata 44

<210> 12
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide for PCR

<400> 12
 attcgatcgg ggcggggcga gc 22

<210> 13
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>

21

<210> 19
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide for PCR

<400> 19
ccccacagta gaggttgagt ccgattaccg

30

ccgattaccg gaggttgagt cccccacagta